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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,846	09/29/2003	Graham D. Wall	15636.11	5327

22913 7590 12/16/2004

WORKMAN NYDEGGER (F/K/A WORKMAN NYDEGGER &
SEELEY)
60 EAST SOUTH TEMPLE
1000 EAGLE GATE TOWER
SALT LAKE CITY, UT 84111

EXAMINER

SAINT SURIN, JACQUES M

ART UNIT	PAPER NUMBER
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2856

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,846

Applicant(s)

WALL, GRAHAM D.

Examiner

Jacques M Saint-Surin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003 and 16 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,13-16 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 3-12 and 17-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/16/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-2, 13-16 and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Huss et al. (US Patent 6,545,946)..

Regarding claim 1, Huss discloses a method for generating system, said method comprising the steps of:

transmitting (ultrasonic transducer 12 generates pulses 16, see: Fig. 1 and col. 3, lines 3-8) one or more bursts of energy towards a surface (14),

receiving reflected pulses from said surface, and converting said reflected pulses into an echo signal, said echo signal including one or more potential each pulses (the generated pulses 16 are directed towards a surface 14 of the liquid, referred to as the target area, and are reflected by the surface 14 as echo tone pulses 18 back to the transducer 12 where they are received and converted to electrical echo pulses representative of the echo tone pulses, see: col. 3, lines 7-12)

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applying an entropy filter to said echo signal, said entropy filter including determining whether information contained in said echo signal an echo signal in a time-of-flight ranging corresponds to a valid echo pulse or is substantially noise (a filter for eliminating substantially the false echo pulses by accepting only electrical echo pulses which occur synchronously among interpulse periods, wherein the accepted echo pulses are used for range measurements of the target, see: col. 2, lines 12-16. Huss further teaches the subsequent steps 58, 60, 62, and 64 of the flowchart represent a filter program in accordance with the present invention for eliminating substantially false echo pulses by accepting only echo pulses which occur synchronously among interpulse periods, wherein the accepted pulses are used for range measurements of the target area by the processor 26 (see: col. 5, lines 27-33);

distinguishing those of said echo pulses determined as comprising noise in said echo signal (undesirable noise interference which has a frequency spectrum that coincides with the resonant frequency bandwidth of an echo signal is amplified and decoded along with the received echo pulses from the transducer 12 by the receiver circuit 24 rendering both real echo signals and false echo signals which are conducted along to the processor 26 for use in determining range measurements to the target area. If left unattended, the false echo pulses will cause erroneous range measurements. To compound matters, such electrical noise may be both synchronous and asynchronous with the pulse repetition rate of the generated pulses, see: col. 5, lines 2-12).

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Regarding claim 2, Huss discloses decisional step 58 determines if the current received pulse having a recorded echo time $T_{sub.E}$ occurs in the instant interpulse period within a predetermined time window or squitter window about the time an electrical echo pulse occurred, i.e. having an echo time $T_{sub.E-1}$, in a preceding interpulse period. The echo time $T_{sub.E-1}$ would have been determined by steps 50-56 of the program for the preceding interpulse period and stored in a designated memory location, see: col. 5, lines 33-41.

Regarding claims 13 and 19, as discussed above, they are rejected for the reasons set forth for claim 1. Furthermore, Huss discloses referring to FIG. 2, the ultrasonic transducer 12 is coupled through a matching network 20 to a transmitter circuit 22 and a receiver circuit 24. The matching network 20 is a directional coupler to channel transmit energy from the transmitter 22 to the transducer 12 and received echoes from the transducer 12 to the receiver 24. In the present embodiment, the circuits 22 and 24 are coupled to a programmed processor 26, which may be a microcontroller of the type manufactured by Dallas Semiconductor, bearing model number 87C520, for example. The timing of the processor 26 is governed by a crystal oscillator 28 which may be set to a precise frequency, like 33 MHz, for example. Operating instructions and data for the processor 26 may be stored in a memory 30, which may be a EEPROM, for example, that is also coupled to the processor 26, see: col. 3, lines 56-67 and col. 4, lines 1-7.

Regarding claims 14-16 and 20-21, Huss discloses the subsequent steps 58, 60, 62, and 64 of the flowchart represent a filter program in accordance with the present invention for eliminating substantially false echo pulses by accepting only echo pulses

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which occur synchronously among interpulse periods, wherein the accepted pulses are used for range measurements of the target area by the processor 26. To accomplish this task, decisional step 58 determines if the current received pulse having a recorded echo time $T_{sub.E}$ occurs in the instant interpulse period within a predetermined time window or squitter window about the time an electrical echo pulse occurred, i.e. having an echo time $T_{sub.E-1}$, in a preceding interpulse period. The echo time $T_{sub.E-1}$ would have been determined by steps 50-56 of the program for the preceding interpulse period and stored in a designated memory location, see: col. 5, lines 27-41.

Allowable Subject Matter

3. Claims 3-12, 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M Saint-Surin whose telephone number is (571) 272-2206. The examiner can normally be reached on Monday-Friday.

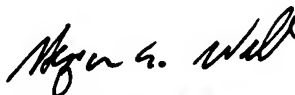
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jacques M. Saint-Surin
December 13, 2004



HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800